

A plasma processing apparatus and a plasma processing method which make it possible to prevent an abnormal discharge from occurring during workpiece removal without having to modify the design or resulting in a reduction in throughput are provided. A wafer W placed on a lower electrode 106 inside a processing chamber 102 at an etching apparatus 100 undergoes the etching process. When the etching process ends, the polarity of the high level DC voltage applied to an electrostatic chuck 108 vacuum holding the wafer W is reversed. A gate valve G is opened to allow N₂ inside a delivery chamber 200 in communication with the processing chamber 102 to flow in. The pressure inside the processing chamber 102 is thus raised to allow a gentle self discharge of the residual charge at the wafer W. Even when the wafer W is removed from the chuck surface of the electrostatic chuck 108 by a lifter pin 130 by lowering the lower electrode 106 from the plasma processing position to the delivery position, no abnormal discharge occurs between the wafer W and the conductive lifter pin 130.